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Ohio State University



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THESIS

A SIMULATED SITUATIONAL APTITUDE
TEST OF LEADERSHIP AS A TOOL FOR
SELECTION OF COMMISSIONED OFFICERS
IN THE NAVY AND MARINE CORPS.

JAMES R. SCHOEN 1st Lt. U.S.M.C.

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A SIMULATED SITUATIONAL APTITUDE TEST OF LEADERSHIP
AS A TOOL FOR SELECTION OF COMMISSIONED OFFICERS IN
THE NAVY AND MARINE CORPS

A Thesis

Presented in Partial Fulfillment of the Requirements
for the Degree Master of Arts

By

JAMES RAYMOND SCHOEN, B.S.

The Ohio State University

1952

Thesis
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A REMARKABLE ATTEMPT TO RECONSTRUCT
THE HISTORY OF THE UNITED STATES
IN THE LIGHT OF THE RECENT
DISCOVERIES OF THE
PAST

A Thesis

Presented to the Faculty of the
University of California at Berkeley
for the Degree of Doctor of Philosophy

BY

JAMES HAYWARD GIBSON, M.A.

The Ohio State University

1922

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CHAPTER I

BASIS FOR THE INSTRUMENT

Introduction

If an officer candidate has passed a physical examination and is able to present proof that he can successfully handle scholastic subjects either by passing a test or showing good school grades on his record, he is eligible for admission into the Naval Academy or N.R.O.T.C. In addition, if he comes from the enlisted file, he may be required to have exhibited promising military attributes on his job. These requirements, in essence, are all that are used in selecting officer candidates for the Navy or Marine Corps. It is submitted in the present study that these selection procedures are remiss in one vital requirement, that of demonstrated leadership aptitude. The Navy and Marine Corps are otherwise stressing the need for leadership among their commissioned officers. It is generally known that the primary products these services want from their officer candidate programs are leaders. They are getting good men with related attributes but none who have been measured and found, before selection for officer training, to have leadership

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[illegible]

aptitude.

Nor do the Navy and Marine Corps give leadership a prominent place among the evaluations made of the midshipmen once the aforementioned officer candidate programs are underway. The only attempt made during the programs to evaluate leadership is sporadic observation by superiors, and this is given only minor weighing in the final determination with scholastic achievement heading a list of related accomplishments.

Therefore, it is proposed that a valid and reliable measure of leadership would be most useful in the selection of leaders for the Navy and Marine Corps. The present study will be devoted to the construction of an instrument to implement such a proposal.

Statement of the Problem

The purpose of this study is to construct a paper-pencil test capable of measuring leadership aptitude in the N.R.O.T.C. midshipmen. In addition, it is intended to establish some criteria of leadership and compare the test with these criteria.

Importance of the Problem

Observers in various fields of endeavor have expressed the need for special consideration of leadership aptitude

How do the Navy and Marine Corps give leadership in
 personnel plans among the various units of the military-
 and does the aforementioned officer candidate program give
 authority. The only attempt made during the program to
 evaluate leadership is sporadic observation by superiors,
 and this is given only minor weight in the final evalua-
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Importance of the Problem

Observers in various fields of endeavor have expressed
 the need for special consideration of leadership aptitude

in the selection of leaders. Mandell (14) advocates a different approach than is presently in use for the selection of leaders in industry and government as well as the armed forces, and he estimates there are 2,000,000 who are required to exercise administrative or supervisory leadership. Freeman and Taylor (7) reason that intelligence testing as it is now, is good for predicting material endowments of intelligence which as a hurdle potential leaders must cross. They point out, however, that for picking aptitude for leadership intelligence testing has no bearing and is therefore only partially effective in the selection of leaders. They note that:

" 1. Leaders must have intellectual ability sufficient to cope with the problems they are required to solve, and 2. intellectual ability is far from all it takes to make a successful business leader ... Does ability to judge the correct thing required in an interpersonal situation predict executive success? Logically this should be the most relevant of all the proposed special intellectual aptitudes."

Meier (15) holds this same view and his study of the selection of R.O.T.C. candidates at Harvard, where an attempt was made to use leadership aptitude as a basis for selection, shows that interviews, apparatus tests, and rating scales contained certain invalidating faults that made them impractical. He proposes a paper-pencil test of military adaptability which simulates combat conditions.

[illegible][illegible][illegible]

Many other measures of leadership aptitude have been suggested, among them sociodrama, leaderless group techniques, stress interviews, and frustration tolerance techniques. (3), (4), (16). The Navy and Marine Corps have problems of great numbers, necessary standardization of instruments, minimum expenditures, and minimum time in emergencies. Whether the aforementioned types of leadership aptitude measures could be used successfully with large numbers, and at a minimum of cost and time is extremely doubtful. Sociometric ratings have also proven successful in many instances and have been proposed for selection purposes. One fault, their personal nature, which smacks too much of democracy in the military has not hastened their adoption. The various techniques just mentioned, then, appear to be unsuitable for measurement of leadership aptitude if applied to the military. However, a paper-pencil test, if validated, would seem to be the answer to the special problems faced by the Navy and Marine Corps. A paper-pencil test could be standardized and still be administered to great numbers at different locations and times. It would cost comparatively little and be easy and quick to administer. Further, it would not conflict with custom or tradition but would, in fact, resemble procedures in the past

[illegible]

when the military has fallen back on paper-pencil tests in other testing situations.

History of Leadership Testing

There have been few efforts made to isolate the elusive quality, leadership, and test for it. As one writer put it:

"This field is approached by many psychometricians with a feeling of defeatism since there has been little success in it. They tend to stay away from this type of testing because of the complex intellectual and tempermental qualities involved." (14)

As far back as 1930, however, one pioneer study by Beckman and Levine (1) reported that in a search for tests to discover executive aptitude for the selection of officials in the city government of Cincinnati, the Allport Ascendency-Submission Test, Laird Introversion-Extroversion Test, and a simple follow direction test were used. In the opinion of the researchers only the first had any promise but a suggested adaptation of it never materialized. Eaton (3) reviews another attempt, one by the British and American Armies in World War II to establish criteria as a beginning in testing for leadership. At the end the two separate studies arrived at opposite poles in their thinking; one believing that leadership was a cooperative function, the other maintaining it was an initiating function on the part

when the military has failed to keep the peace in
other leading nations.

History of the League of Nations

There have been two efforts made to isolate the League
namely, leadership, and peace for it, as the world has it

"This field is approached by many governments
and with a feeling of isolation since there has
been little success in it. They have to wait
very few of this type of feeling because of the
League's isolation and international position
involved." (1)

As the League was 1920, however, one pioneer study by Beaman
and Lewis (1) reported that in a search for peace to dis-
cover executive attitude for the isolation of officials in
the first government of the League, the League Assembly-
Committee had taken into consideration first, and
a single action division was used. In the opinion
of the researchers only the first had any promise but a

suggested adoption of it was maintained. Union (2)
reviewed another attempt, one by the British and American
League in 1921 to establish a League as a League
in testing the leadership, at the end the two separate
studies arrived at opposite points in their findings one
believing that leadership was a cooperative function, the
other maintaining it was an isolated function on the part

of one individual. The studies were abandoned.

Since the war, attempts at leadership testing have been more numerous. "How Supervise?", a simulated situational questionnaire for selection of supervisors was based on human relations and facts which it was felt a supervisor needed in handling men. It was thought to be a valid instrument by its author (5), but others (20) (14) have questioned its validity.

Sanford and Hemphill constructed one test for use in determining Naval leadership (19) but it did not prove to be successful.* Fearnow (4) adapted this test and tried it out on the N.R.O.T.C. midshipmen at Ohio State University. He found it to be an unsatisfactory measure of military leadership potentialities but pointed out this may have been due to: 1. Situations not clear enough, 2. Items answered in what was thought to be the approved Navy way. The present writer feels that the extreme shortness of the Sanford-Hemphill test (only 21 questions) and inappropriateness of the basic leadership dimensions used may also have been contributing factors.

The aforementioned attempts to test for leadership and

* This view expressed by Hemphill in conversation with the writer.

of one individual. The studies were conducted. These two were, attempts at leadership testing have been made. "The Experiment", a simulated situation. Qualitative for selection of supervisors was based on human relations and facts when it was felt a supervisor must be meeting men. It was thought to be a valid statement by the subject (3), but others (20) (14) have questioned its validity.

Conrad and Hopfili conducted one test for use in determining social leadership (19) but it did not prove to be successful. * Pearson (4) adapted this test and tested it out on the E.M.O.T.C. students at Ohio State University.

He found it to be an unsatisfactory measure of military leadership potentialities but pointed out this may have been due to: 1. Questions not clear enough, 2. Items answered in what was thought to be the approved way only. The present writer feels that the extreme shortness of the Hopfili test (only 21 questions) and inappropriateness of the basic leadership dimensions used may also have been contributing factors.

The aforementioned attempts to test for leadership and

* This was repeated by Hopfili in connection with the writer.

others that have been made have never gained universal recognition as being valid. It is the opinion of this writer that the reason for such lack of validity is due to the fact that leadership in the earlier studies had not been accurately or truly defined and that its critical elements had not been isolated. Since the dimensions of leadership were not known, and since it was not known what a man had to have in order to be a leader, it is little wonder that an adequate test for leadership could not be constructed.

What is Leadership?

Until recently, leadership had usually been thought of as a specific attribute of personality or a group of traits that some persons possess and others do not. Such an assumption of specificity has been an important underlying reason for the failure of so many leadership studies. Reviews by Otis (17) and Stogdill (22) have pointed out the diversity and quantity of traits which have been claimed to typify leadership. Moreover, traits found to characterize leaders in one study were often found to characterize non-leaders in another study. The Personnel Research Board at Ohio State University which has been working on the study of leadership for over five years has rejected the trait approach to leadership. Fleishman (6) summarizes and

states that these words have never gained universal recognition as being valid. It is the opinion of this writer that the reason for such lack of validity is due to the fact that leadership is the explicit subject and not an implicit one. It is only by the study of the explicit elements and not the implicit, that the dimensions of leadership may be known, and since it was not known what a man did or how in order to be a leader, it is little wonder that an adequate basis for leadership could not be constructed.

What is leadership?

Until recently, leadership has usually been thought of as a specific attribute of personality or a group of traits that some persons possess and others do not. Such an assumption of specificity has been an important underlying reason for the failure of so many leadership studies. As views by Gode (17) and Campbell (22) have pointed out the diversity and quantity of traits which have been claimed in typical leadership. However, traits found to be associated with leaders in one study were often found to be unrelated in another study. The Personnel Research Board at Ohio State University which has been working on the study of leadership for over five years has rejected the trait approach to leadership. Pritchard (6) summarizes and

attempts to prove this contention.

Otis made a complete review of all accumulated data on the scope and function of the jobs of company grade officers on duty with troops. He also analyzed 283 periodical and textbook sources and found:

".... little agreement in the technical literature in defining leadership. There have been such approaches as (a) defining it in terms of traits possessed by an individual, (b) defining it in terms of characteristics or traits of those being led, and (c) considering leadership as a function of the individual, the followers, and the situation ... For example, if one adhered to the leader trait theory, (a) he would assume that if the commanding officer of Company A possessed the trait "initiative" or "trustworthiness", or any or all of the other postulated traits, he would also make a good commander of Company B or Company C. Conversely, if the company commander of Company C did not possess these traits (and thus was judged to be a poor leader) he would also be a poor commander of Company K ... If one subscribed to the second definition of leadership, (b), he would have to assume that almost anybody could lead men if these men had a need to be or were predisposed to being led. The third definition, (c), tends to de-emphasize the leader and to stress the situation. If the situation makes the leader, then in order to have a good leader in command of a platoon or company at all times, one may find it necessary to change commanders at the approach of each new general situation. On an a priori basis each of these three definitions by themselves seems inadequate. Therefore, for the purposes of this study: - Leadership shall be defined as the functional and dynamic interrelationship between the leader and those being led in given situations. These relationships must include the characteristics of the leader and the followers, as well as of the situations in which they find themselves." (17)

...the purpose of this study - leadership will be defined as the leadership and dynamic influence which is exerted by the leader and those who follow. This relationship must include the leader and the follower. The relationship of the leader and the follower is as well as the relationship in which they function. Therefore, leadership is defined as the leadership and dynamic influence which is exerted by the leader and those who follow. This relationship must include the leader and the follower. The relationship of the leader and the follower is as well as the relationship in which they function.

The present writer accepts the above definition of leadership as do in its essence many of the very recent authoritative studies. Hemphill similarly concludes, "... that a definition of leadership must include the characteristics of the social situation and the characteristics of an individual." (9) Other studies making similar conclusions are those of Gibb (8), Pigors (18), Coffin (2), and Jenkins (12).

The Development of Critical Dimensions of Leadership

As Shartle reports (21) the leadership studies of the Personnel Research Board attempted to determine how the leader performs his role as contrasted to what activities he performs. In one study he reports that 1800 specific statements of leader behavior were collected. From an analysis of these statements nine dimensions of leader behavior were developed. Further evaluation by 357 persons combined and reduced this number to three. (11) In a later study reported by Hemphill (10) a factor analysis was made of a questionnaire given to 300 Air Force crew members who described their airplane commander. Using the earlier study to classify the results, four revised dimensions of leadership were found. They were:

The research within accepts the above definition of

leadership as it is the process of the very process

of leadership. Researcher studies. Researcher studies.

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an individual. (9) Other studies making similar errors

also are found in Gill (8), Likier (18), Gellin (2), and

Levinson (12).

The Development of Critical Dimensions

of Leadership

In this report (21) the leadership studies of the

Personnel Research Board attempted to determine how the

leader behaves his role as compared to what he studies

he performs. In one study he reports that 1500 specific

statements of leader behavior were collected. From an analysis

all of these statements also dimensions of leader behavior

were derived. Further evaluation by 57 persons combined

and reduced this number to three. (11) In a later study

reported by Herzberg (10) a factor analysis was made of a

questionnaire given to 500 Air Force crew members who de-

scribed their airplane commander. Using the earlier study

to classify the results, four revised dimensions of leader-

ship were found. They were:

1. Consideration
2. Initiating Structure
3. Production Emphasis
4. Social Sensitivity

Fleishman (6) took these dimensions and constructed another questionnaire for use with supervisors in an industrial situation. In his pilot study, Fleishman found that items 3 and 4 were so heavily loaded with "consideration" and "initiating structure" factors that they could be eliminated. The two remaining dimensions were found in his later "Industrial Study" to be quite independent and discriminate. The two remaining factors were:

"1. Consideration: this factor represents the extent to which the leader is considerate of the feelings of those under him. It is the 'nice fellow' dimension. It comes closest to representing the human relations approach toward group members.

"2. Initiating Structure: this factor contains items that reflect the extent to which the leader restricts or facilitates the interactions of group members toward goal attainment. He does this by planning, communicating, scheduling, trying out new ideas, and similar activities." (6)

Langendorf applies the same two dimensions more simply stated, to a company commander's job in the Army. "A company commander's job is to integrate the personal objectives of the men with the objectives of the organization." (13)

1. Generalization

2. Existing situation

3. Problematic situation

4. Social sensitivity

5. (6) From these dimensions and connections

another dimension for our work emerges in the

current situation. In the pilot study, Kistner found

that there were no heavily loaded with "concerns"

and "existing situation" issues that they could

be eliminated. The two remaining dimensions were found in

the later "Industrial Study" as an independent and

distinctive. The two remaining factors were:

"1. Generalization: This factor represents

the extent to which the factor is considered

one of the factors of the study. It is

the "new factor" dimension. It is

closest to representing the human relation

approach toward these factors.

"2. Existing situation: This factor represents

the extent to which the factor is considered

one of the factors of the study. It is

closest to representing the human relation

approach toward these factors.

These two dimensions were found in

the later "Industrial Study" as an independent and

distinctive. The two remaining factors were:

"1. Generalization: This factor represents

A recent study of the Personnel Research Board further defines the latter dimension: "Structure-in-interaction is a consistency in behavior occurring during interaction which permits the prediction of future interacting behavior with an accuracy exceeding chance ... Let us suppose that ... (an individual) ... introduces consistency in his behavior with acts which suggest the form of their subsequent interacting. He may be perceived as the initiator of structures-in-interaction ... A leader can be designated as an individual who has the role of initiating structure in interaction." (10) The same study also verified that the two dimensions, "consideration" and "initiating structure," accounted for approximately 85 per cent of the common factor variance of the 130 items in the previous study of behaviors of airplane commanders, and that they were relatively independent.

From these studies, then, it can be seen that leadership has, at least tentatively, been defined, and that two vital dimensions of what a leader has to have have been isolated. Further, these two dimensions, "consideration" and "initiating structure" were present in a vast majority of the typical leader behaviors analyzed among airplane commanders and industrial supervisors. From this it might

A recent study of the Environmental Research Society (1968) defines the latter dimension: "Person-in-environment is a relationship in behavior occurring during interaction which provides the position of future interacting behavior with an already existing context ... Let us suppose that ... (the individual) ... responses consistently in his behavior also have been exposed to two of their subsequent interaction. He may be perceived as the initiator of subsequent information ... A learner can be designated as an individual who has the role of initiating response in subsequent." (11) The same study also verified that the two dimensions, "consideration" and "initiating response," accounted for approximately 55 per cent of the common factor variance of the 115 items in the previous study of behavior of airplane commanders, and that they were relatively independent.

From these studies, then, it can be seen that leadership was at least tentatively, well defined, and that two vital dimensions of what a leader has to have been isolated. Further, these two dimensions, "consideration" and "initiating response" were present in a vast majority of the typical leader behaviors analyzed in the study of commanders and industrial supervisors. From this it might

be inferred that "consideration" and "initiating structure" are general dimensions of leadership. It might also be inferred that a test built around social situations in the military and using these two dimensions to evaluate an individual's behavior in those situations would be, in effect, a measure of leadership.

An Hypothesis

For the present study it is hypothesized from the preceding inferences that a critical incident of leadership, capable of being tested, is the proper balance the leader holds in making his decisions between "consideration" and "initiating structure," i.e., between consideration for the feelings, integrity, and person of his men and the systematic and organized manner in which he performs his mission. It is the purpose of the present study to construct a paper-pencil test capable of determining the extent to which an individual possesses or is able to hold this critical balance.

It is also intended that the test to be constructed, simulate real life situations as nearly as possible. From the definition of leadership previously stated it can be seen that the situation is a crucial factor. Hemphill (9) supports this view by stating:

be interpreted as "consideration" and "instilling structure" and general dimensions of leadership. It should also be noted that a task will involve social situations in the military and that these two dimensions are essential to the Division's behavior in these situations would be in effect a measure of leadership.

AN HYPOTHESIS

For the present study it is hypothesized that the preceding information has a critical incident of leadership, especially if being tested. In the proper balance the leader helps in making his decision between "consideration" and "instilling structure", i.e., between consideration for the feelings, integrity, and power of the man and the system, and organized power in which he performs his duties. It is the purpose of the present study to conduct a detailed study of determining the extent to which an individual possesses or is able to find this critical balance.

NOTE:

It is also intended that the test to be constructed, stimulate real life situations as nearly as possible, from the definition of leadership previously stated it can be seen that the situation is a crucial factor, Campbell (2)

expresses this view by stating:

"In the evaluation of leadership the characteristics of the situation set the qualitative standard for a leader's behavior Leadership is the behavior of an individual directing group activities and adequacy of leadership is an evaluation of the correspondence between the individual's behavior and the behavior demanded by the situation."

Plan of Procedure

In the construction and analysis of the test with which the present study is concerned, the following procedure was adhered to:

1. Construction of the test items.
2. Submission of items to a group of military judges for criticism and refinement.
3. Revision and consolidation of items to form the test.
4. Administration to a sample composed of the senior class of N.R.O.T.C. midshipmen at Ohio State University.
5. Scoring by judges.
6. Establishing criteria of leadership.
7. Comparison of the test with criteria.
8. Analysis of results.

"In his examination of leadership the researcher
 takes of the situation and the qualitative stand-
 ard for a leader's behavior.... Leadership is
 the behavior of an individual directing group ac-
 tivities and adequacy of leadership is an evalua-
 tion of the correspondence between the individ-
 ual's behavior and the behavior demanded by the
 situation."

Plan of Procedure

In the investigation and analysis of the test with which
 the present study is concerned, the following procedure was
 followed:

1. Description of the test items.
2. Submission of items to a group of military judges
 for criticism and evaluation.
3. Revision and compilation of items to form the
 test.

4. Administration to a sample composed of the senior
 officers of M.A.C.T.C. assignments at State House Uni-
 versity.

5. Scoring by judges.
6. Revisiting criteria of leadership.
7. Comparison of the test with criteria.
8. Analysis of results.

CHAPTER II

CONSTRUCTION, ADMINISTRATION, AND SCORING OF THE INSTRUMENT

The Test Items

A copy of the test constructed for the present study is exhibited in Appendix 1. Each of its items are based on two factors proposed by the Ohio State University personnel Research Board and defined in Chapter I of the present study. The factors are:

1. "Initiation of structure in interaction"
2. "Consideration"

The factor, "initiation of structure in interaction," is characterized (10) by leader behaviors such as:

1. Asking crew members to follow standard practice.
2. Maintaining definite standards of performance.
3. Making sure his part in the crew is understood.
4. Trying out his new ideas on the crew.

The factor, "consideration," is characterized (10) by leader behaviors concerned with social problems of the love and affection, security, and prestige variety such as:

CHAPTER II

CONSTITUTION, ADMINISTRATION, AND POLICY OF
THE BUREAU

THE FIRST ISSUE

A copy of the first issue of the Bureau's study is included in Appendix I. Each of its lines was based on two factors proposed by the State University of New York. The first factor was the fact that the Bureau's study was the first of its kind in the United States. The second factor was the fact that the Bureau's study was the first of its kind in the United States.

1. "Initiation of studies in education."

2. "Commitment."

The latter, "Initiation of studies in education,"

is characterized (10) by leader behaviors such as:

1. Making new members to follow standard

positions.

2. Encouraging certain standards of performance.

3. Making sure his part in the work is done.

Also,

4. Trying out his own ideas on the work.

The former, "commitment," is characterized (10) by

leader behaviors connected with control problems of the low and efficient, security, and prestige variables such as:

1. Doing personal favors for crew members.
2. Looking out for the personal welfare of crew members.
3. Not refusing to explain his actions.
4. Treating crew members like his equals.
5. Being friendly and approachable.

These behaviors were found to be significant for leadership by the Personnel Research Board. (10) In construction situational items for the present study, these behaviors were adapted to Naval and Marine situations along with others gathered from a revised 80 item questionnaire used by the Personnel Research Board to obtain leader behavior descriptions.

From the outset it was decided to build each test item around the decision a leader would have to make in a Naval or Marine situation. Therefore, each of the situations as they were adapted from the leader behavior descriptions were phrased so as to require a decision on the part of the person being examined. For instance, the leader behavior description, "treating crew members like his equals," was formed into a situation such as:

There is a long line of enlisted men at the cigarette counter in the Navy Exchange. What should you do?

1. Being personally known for some months.
2. Being out for the personal welfare of the community.
3. Not refusing to explain his actions.
4. Treating every member like his equals.
5. Being friendly and approachable.

These qualities were found to be significant for leadership by the International Research Board (19). In comparison with national teams for the present study, these qualities were adapted to Israeli and Arab situations along with others gathered from a review of 100 group dynamics studies by the International Research Board as criteria for leadership. These qualities were found to be significant for leadership. From the outset it was decided to hold each team for a period of 12 weeks. A leader would have to work in a team of 12 members. Therefore, each of the situations as they were adapted from the leadership literature were presented as a positive decision on the part of the person being examined. For instance, the leader behavior "being friendly" was described as "treating every member like his equals," and "being out for the personal welfare of the community" was described as "being out for the personal welfare of the community." There is a long line of evidence that the most significant factor in the group process is the leader's behavior.

The person answering the item would have to decide whether he was going to take the "considerate" action and get in line or reject it and go to the head of the line. Instead of restricting the items to essay type answers, however, it was decided that two possible answers to each situation, the one "considerate" to an extreme, the other an extreme "initiating of structure"(hereinafter also referred to as "authoritarian"), would be inserted after each situation. This was intended to lead the already "considerate" minded or "authoritarian" minded person into exemplifying his inclination. A third alternative to the solution of the situation was to be a blank space entitled "other" wherein the person answering the question could write in whatever he thought was a better solution. For example:

27. During a slack period that appears indefinite, your men have nothing to do. Should you:

_____ let them lie around and do nothing
all day if they want to.
_____ make up some kind of "busy work" to
keep them on the job.

OTHER:

The two printed answers were purposely intended to represent decisions as far to each extreme as possible in keeping with plausibility. This was to leave plenty of leeway for the discriminating person to expound his own solution but still make certain the "considerate" or "authoritarian"

The person submitting the item would want to decide whether
 he was going to have the "considerate" action and not in-
 line or reject it and go to the head of the line. Instead
 of rejecting the item to save the person, however, it
 was decided that the possible manner to save the person
 the one "considerate" to an extreme, but other an extreme
 "tolerance of extremes" (original) also referred to as
 "ambivalence" would be inserted after each situation.
 This was intended to lead the already "considerate" minded
 to "ambivalence" minded person into simplifying his in-
 formation. A third alternative to the solution of the in-
 action was to be a third space entitled "other" wherein the
 person submitting the question could write in whatever he
 thought was a better solution. For example:

Q. I'm having a hard time getting my report in-
 terv. You can have nothing to do. Should
 I let them live around and do nothing
 all day if they want to,
 make up some kind of "busy work" to
 keep them on the job.

OTHER:

The two printed answers were purposely intended to re-
 main decisions as far as each extreme as possible in keep-
 ing with plausibility. This was to leave plenty of leeway
 for the discriminating person to expand his own solution
 but still make certain the "considerate" or "ambivalence"

inclined examinee would be forced to reveal his bent.

There were two aspects of the mechanical construction of the aforementioned item type that caused the writer some apprehension. One was the fear that the students being unused to this type of item might take the simplest road out by simply checking most of the answers. In some instances this appeared to be the case. However, in the final analysis of the returns it was found that 620 out of a total of 1400 items, over 44 per cent, were answered by written-in answers under the "Other" category, rather than checked, as described in the above example. The second danger, that some students might "catch on" to the continual misleading printed answers was partially compensated for by interspersing several decoy questions in which the printed answers were the more obvious solutions.

Role of the Judges

Sixteen judges were used at two points in the study. There were twelve regular Naval and Marine Corps officers and four regular Army officers. They were used in the role of military experts. They ranged in rank from First Lieutenant to Lieutenant Colonel and in amount of commissioned service on active duty from six and one-half years to nineteen years. They might further be described by mentioning that

limited number would be found to reveal the fact.
 There were two aspects of the mechanical construction
 of the instrument from time to time caused the writer some
 apprehension. One was the fact that the instrument being
 found to this type of type might take the instrument from
 any to simply checking over of the instrument. It was in
 reference only reported to be in use. However, in the
 final analysis of the instrument it was found that 100 out of
 a total of 1000 items, over 50 per cent, were answered by
 written-in answers rather than the "other" category, which had
 standing, as described in the above example. The second
 category, that some students might "switch on" to the multiple
 and misreading related answers was particularly emphasized
 for its importance covered every position in which the
 printed answers were the more obvious solutions.

Role of the Teacher

Student factors were used at two points in the study.
 There were twelve regular French and Spanish course officers
 and four regular army officers. They were used in the role
 of military experts. They ranged in rank from first lieutenant
 and to lieutenant colonel and in number of commissioned out-
 rigger on active duty from one and one-half years to thirteen
 years. They were further be described by mentioning that

they were all enrolled in postgraduate personnel administration and training at Ohio State University. This provided some common bases of understanding of the problems involved in their role.

After a brief explanation of this study and a definition of terms, the original 67 items were submitted to the judges with instructions for them to indicate which were the best for the purpose intended. Thus each item was looked at by from six to eight judges and by their consensus the best 40 were chosen. These were then re-edited and in some cases rewritten according to suggestions received from the judges. To these 40 re-edited items were added five decoys, the purpose of which has been described, to make up the complete simulated leadership aptitude test used in the present study.

At a later point, the scoring of the test, the same judges were employed in a manner to be described shortly.

The Sample

The senior class of 38 midshipmen of the N.R.O.T.C. at Ohio State University comprised the sample who were to take the test. These students were pre-selected for the N.R.O.T.C. upon consideration of their high school grades, physical qualifications, Officer's Qualification Test Scores, and

they were all enrolled in psychology department classes
-and were training at Ohio State University. This pro-
-vided some common basis of understanding of the problems
involved in their role.

Below a brief explanation of this study and a brief-
-list of notes, the original 17 items were submitted to the
judges with instructions for them to indicate which were
the best for the purpose intended. Then each item was
indicated as to how it was to be used and by what method
was the best to use chosen. These were then re-vised
and in some cases rewritten according to suggestions re-
ceived from the judges. To these 10 re-written items were
added five more. The purpose of which has been described.
To make up the complete standard judgmental scale used
was in the present study.

As a factor point, the scoring of the test, the same
judges were assigned in a manner to be described shortly.

The Sample

The sample class of 30 students of the K.K.O.T.O. at
Ohio State University completed the sample and were to form
the test. These students were pre-selected for the K.K.O.T.O.
upon recommendation of their high school grades, physical
qualifications, O'Brien's Classification Test Scores, and

findings of appointing boards. They had completed three years of N.R.O.T.C. work already and were therefore considered to be potential, satisfactory, commissioned officer material. They had had some leadership instruction and a common background of Naval terminology. Any test on such a selected group might not be as discriminating an instrument as one on a random sample of applicants for Naval Officer candidate programs.

The test was administered to the midshipmen in two groups under identical conditions during two regularly scheduled classes one morning. A fifty minute period was allotted. First a sociometric rating blank (example exhibited in Appendix 2) was passed out to be used in later analysis of the results. At the end of three minutes time was called, and the rest of the period was given to the leadership test. All but four students finished the test in the allotted time. These four papers were considered the same as the others in the scoring and were thus penalized for taking too much time to reach their decisions. Two absentees and lack of criterion data in one case reduced the final number of usable cases to 35.

Scoring the Test

It was decided to score the test in two ways. First

The purpose of appointing boards, they had completed their
 work of U.S.G.T.C. work already and were therefore consid-
 ered to be potential, satisfactory, commissioned officers
 and they had been given leadership instruction and a
 common background of Army training, and had an understanding
 of the importance of the organization in the future
 as one of a number of agencies for Army training
 and development.
 The first was administered to the midshipmen in the
 group under identical conditions during the regularly
 scheduled classes on testing. A fifty minute period was
 allowed. There was a preliminary testing blank (sample only)
 and in (Appendix 2) was given out to be used in later test-
 ing at the middle. At the end of three minutes time
 was called, and the rest of the period was given to the lead-
 ers. All four students finished the test in
 the allotted time. Their test report was submitted the
 day after the test in the morning and were thus completed
 for rating the week prior to their final decision. The
 absence and lack of objective data in one case reduced
 the final number of scores given to 31.
During the test
 It was decided to score the test in two ways. First

to give credit for good leadership solutions by means of a "quality" score. This was to be a measure of the ability of the midshipman to devise good decisions from the given situations. The second was to score the "bent" of the midshipman toward either "consideration" or "initiating structure." This was to be a measure of the extent to which the midshipman had conceptualized the role of a leader to be predominantly "considerate," "authoritarian," or perhaps "middle of the road."

The printed answers that had been indicated by checkmarks were self scoring. No "quality" credits could be given since neither answer was supposed to be a good one in itself. "Bent" credits were assigned to "considerate" or "authoritarian" according to which extreme had been checked.

All "other" items or those in which the midshipman had written his own solution or a modification, however brief, were submitted to the judges for scoring. Each answered item was scored by six judges who indicated their "quality" credit and "bent" credit by symbols in little boxes drawn for that purpose right on each test. The meanings of the terms used for the scoring were again explained and the following written instructions given to each judge:

to this effect the good landscape is evident on many of a
'quality' scene. This may be in a number of the style
of the landscape as water good conditions from the river
distance. The water is in fact the "best" of the landscape.
delight found in the "landscape" of "landscape" scene.
This may be in a number of the style of which
the landscape has comprehended the style of a landscape in
be fundamentally "landscape", "landscape", or perhaps
"style of the style".

The landscape scene has been indicated by the
style of the style. No "style" style could be
from the style scene was found to be a good one
in itself. "Style" style was found to be "landscape".
or "landscape" style to which style has been
style.

All "style" style is found in which the style has
style the style as a landscape. Landscape style,
was found to be the style for style. This style
style was found to be the style of the style "style".
style and "style" style is found in the style of the
for the style style in each style. The style of the
style was found to be the style style and the
following style style style is the style.

"Categories for Marking Exams

Quality

- G. An answer which represents a good solution exemplary of good leadership.
- SS. An answer which represents a temporary solution to the problem, i.e., one which is neither outright "good" nor poor.
- P. An answer which represents a poor or unworkable solution, i.e., one no better than one of the printed ones.

Bent

- A. Too "authoritarian," i.e., too structured toward the military.
- C. Too "considerate."
- MR. A "middle of the road" solution designed to satisfy both the men and the mission."

On 536 of the answered items the judges agreed six to nothing as to which category the answer belonged. On 350 answers there was 5 - 1 agreement; on 203 answers there was 4 - 2 agreement; and on 150 answers there was a 3 - 3 split. These 150 answers were either given an interpolative value if possible or resubmitted to the entire 16 judge panel. Analysis at this point showed there was approximately 81 per cent agreement among the judges as to the scoring of written-in items.

Values were assigned to item credits as follows:

"Quality" scores

good, "G", answers	4 points
so-so, "SS", answers	2 points
poor, "P", answers	0 points

Summary

1. An answer which represents a poor or inadequate grasp of good leadership.
2. An answer which represents a completely false or incorrect view of the situation, i.e., one which is either too "good" or too "bad".
3. An answer which represents a poor or inadequate grasp of the situation, i.e., one which is either too "good" or too "bad".

Notes

1. The "unsubstantiated" i.e., has answered so-
what not really.
2. The "unsubstantiated" i.e., has answered so-
what not really.
3. A "middle of the road" answer designed to mis-
lead both the man and the situation.

On the of the answers given the judges agreed as to

whether or not each category the answer represented. On the

answers there was 1 - 1 agreement; on 20 answers there was

1 - 1 agreement; and on 100 answers there was 1 - 1 vote.

These 100 answers were either given as leadership values

it possible to be considered as the entire 10 judges panel.

Analysis of this panel showed there was approximately 10 per

cent agreement among the judges as to the scoring of each

answer in terms.

Values were assigned to them as follows:

Good, "B", answers 4 points	"Quality" scores
Good, "C", answers 3 points	
Good, "D", answers 2 points	
Good, "E", answers 1 point	

"Bent" scores

"considerate," "C", answers -2 points
"Authoritarian," "A", answers +2 points
"middle of the road," "MR", answers 0 points

The Sociometric Scale

This scale (Appendix 2) consisted of two parts, unknown to the midshipman, one of a mere friendship pattern, the other of a leadership pattern. Values were assigned, three points for a first place mention, two points for a second place mention, and one point for a third place mention. Thus an overall sociometric score was obtained as well as a strictly leadership score and a strictly friendship score.

Points	Country	Year
5 points	Sweden	1974
34 points	Sweden	1975
0 points	Sweden	1976

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in the literature, one of a more intensive patient, the

...of a

Waste for a first class meeting, the police for a second

10-11-68

as if he had been an even stronger liberal than he was.

A positive leadership team and a positive relationship

CHAPTER III

FORMATION OF CRITERIA AND ANALYSIS OF THE INSTRUMENT

Description of the Scores

The instrument constructed in the present study yielded two types of scores, "quality" scores and "bent" scores. The scores are exhibited in Table 1. A high "quality" score meant that the midshipman had rejected the "authoritarian" and "considerate" answers more often than his fellows to write in good leadership solutions as deemed by the military judges. Conversely a low "quality" score meant either that the midshipman was lead into accepting more "authoritarian" and "considerate" answers or that the leadership solutions he wrote were poor. The "quality" scores ran from 16 to 86, a range of 70 points. Their mean was 47.5; the standard deviation 16.19.

The "bent" scores ran from +29 to -26, a range of 55 points. Their mean was -1.3; the standard deviation 12.04. A high plus score indicated that the midshipman had chosen predominantly "structured" solutions. A large minus score indicated that he had chosen the "considerate" solution most often. As the scores, both plus and minus, neared zero it indicated that the midshipman was holding more of

FORMATION OF CRISTINA AND ANALYSIS OF THE TESTIMONYFormation of the Groups

The testimony submitted to the previous stage yielded two types of answer, "qualify" answer and "point" answer. The answer was exhibited in Table I. A high "qualify" answer meant that the witness had rejected the "substantiated" and "considerate" answers given after his failure to write in such fashion. He was not up to the military judge. Conversely a low "qualify" answer meant either that the witness was not able to account for "substantiated" and "considerate" answers or that the witness's opinion in such case was poor. The "qualify" answer was from 10 to 90, a range of 70 points. There was 45.2; the standard deviation 10.19.

The "point" answer was from 45 to -55, a range of 55 points. There was -4.3; the standard deviation 11.07. A high point answer indicated that the witness had shown predominantly "substantiated" answers. A large minus score indicated that he had chosen the "considerate" answer most often. In the answer, both plus and minus, zero was indicated that the witness was holding none of

Table 1 - "Quality" Scores and Corresponding "Bent" Scores.

Rank	QUALITY	BENT
	Score	Score
1	86	-16
2	84	- 4
3	80	0
4	77	- 9
5	66	+ 3
6	63	+ 6
7	58	0
8	56	-17
9	53	+10
9	53	-13
11	50	- 7
11	50	+ 5
11	50	- 6
14	49	+10
14	48	+10
16	48	- 3
17	46	+ 4
17	46	-12
17	46	-18
20	44	0
21	42	- 8
22	41	-14
22	41	+ 9
24	40	+ 9
26	39	+ 4
26	39	+ 2
27	38	+22
28	37	-26
29	35	-13
30	34	0
31	30	+29
31	30	- 5
33	28	+18
34	20	+ 4
35	16	-20
M. = 47.5		M. = -1.3
S.D. = 16.19		S.D. = 12.04

GROUP	MEAN	STANDARD DEVIATION	STANDARD ERROR
1	1.00	0.00	0.00
2	1.00	0.00	0.00
3	1.00	0.00	0.00
4	1.00	0.00	0.00
5	1.00	0.00	0.00
6	1.00	0.00	0.00
7	1.00	0.00	0.00
8	1.00	0.00	0.00
9	1.00	0.00	0.00
10	1.00	0.00	0.00
11	1.00	0.00	0.00
12	1.00	0.00	0.00
13	1.00	0.00	0.00
14	1.00	0.00	0.00
15	1.00	0.00	0.00
16	1.00	0.00	0.00
17	1.00	0.00	0.00
18	1.00	0.00	0.00
19	1.00	0.00	0.00
20	1.00	0.00	0.00
21	1.00	0.00	0.00
22	1.00	0.00	0.00
23	1.00	0.00	0.00
24	1.00	0.00	0.00
25	1.00	0.00	0.00
26	1.00	0.00	0.00
27	1.00	0.00	0.00
28	1.00	0.00	0.00
29	1.00	0.00	0.00
30	1.00	0.00	0.00
31	1.00	0.00	0.00
32	1.00	0.00	0.00
33	1.00	0.00	0.00
34	1.00	0.00	0.00
35	1.00	0.00	0.00
36	1.00	0.00	0.00
37	1.00	0.00	0.00
38	1.00	0.00	0.00
39	1.00	0.00	0.00
40	1.00	0.00	0.00
41	1.00	0.00	0.00
42	1.00	0.00	0.00
43	1.00	0.00	0.00
44	1.00	0.00	0.00
45	1.00	0.00	0.00
46	1.00	0.00	0.00
47	1.00	0.00	0.00
48	1.00	0.00	0.00
49	1.00	0.00	0.00
50	1.00	0.00	0.00

1.00 ± 0.00 1.00 ± 0.00 1.00 ± 0.00

a balance between extremes. An exact score of zero showed that he had chosen just as many "structured" solutions as "considerate" and thus his "bent" was "middle of the road" insofar as this test was concerned.

The "quality scores" correlated with the bent scores a minus .16 ($r = -.16$) and with the deviation of the "bent" scores from zero a minus .28 ($r = -.28$). Thus neither of the scores could be considered very closely related to the other. However, there is a tendency for those who deviated least from zero to have higher quality scores.

Reliability of the Instrument

Since it was apparent that the test measured a single ability, two Kuder-Richardson formulae were used to determine the reliability. Both formulae gave identical results

TABLE 2

Kuder-Richardson Formulae Used to Determine Reliability Coefficients

$$r = \frac{n}{n-1} \left(1 - \frac{\sum pq}{s^2} \right)$$

$$r = \frac{s^2 - \sum pq}{\sum \sqrt{pq} - \sum pq} \cdot \frac{\sum \sqrt{pq}}{s^2}$$

to two decimal places. The reliability of the quality scores equaled .62 ($r = .62$) and of the bent scores equaled .94 ($r = .94$). No attempt was made to purify test items

a relation between estimates. In each group of two studies that in each group there was "strong" evidence as "moderate" and then the "weak" was "strong" at the end.

The quality scores were calculated with the best scores a minus .10 ($r = -.10$) and with the deviation of the "best" scores from zero a minus .10 ($r = -.10$). These values of the scores would be considered very closely related to the other. However, there is a tendency for those who deviate from zero to have higher quality scores.

Reliability of the Instrument

Since it was expected that the test measured a single ability, two Ebel-Kriegerman formulas were used to determine the reliability. Both formulas gave identical results.

TABLE 2

Ebel-Kriegerman Formula Used to Determine Reliability Test Results

$$r = \frac{\sum x^2}{N \cdot \bar{x}^2} - 1 \quad \text{and} \quad r = \frac{\sum x^2 - \frac{(\sum x)^2}{N}}{\sum x^2 - \frac{(\sum x)^2}{N}}$$

for two distinct groups. The reliability of the quality scores was .82 ($r = .82$) and of the best scores was .82 ($r = .82$). No attempt was made to quality test items.

other than submitting them to the military judges before the test was ever administered.

Establishment of the Criteria

It was decided early in the study that three basic criteria would be used to compare test scores. These were to be sociometric ratings by peers, ratings by superiors, and intelligence scores. At best these means used as criteria are weak. The sociometric ratings were dangerously established from overall impressions of peers. Thus the ever important "situation" and "group being lead" were left out, meaning that the raters were forced to generalize from traits, characteristics, and general impressions. It has already been noted that such an approach to leadership is hardly accurate. However, sociometric ratings have been proven to have great value in measures of leadership and must definitely be considered in the study of leadership where the need for any criteria is great. (23) Superior ratings because of their bias and often lack of adequate opportunities for observation have often fallen short of being acceptable criteria. Again, however, the need for criteria is great and it is imperative that criteria once decided upon must be used. The intelligence scores were used here more to see just how the scores did compare with

which have been adopted in the various forms before
the law are very satisfactory.

Examination of the Evidence

It was pointed out in the early part of the
evidence that the need for a more efficient system
of the administrative system of power, which is required
and satisfactory system, it has been found that the
needs are many. The administrative system has been
examined from various points of view. It has
been found that the system was found to be a very
important "system" and "group" and "group" and "group"
which, characterized, and general character. It has
already been noted that the system is generally in
badly organized. However, the administrative system has been
found to have great value in the study of leadership and
was definitely in the study of leadership
which the new law will be made. (2) The
system is made of such a kind that it is of a
character for observation and often called for
being acceptable system. Again, however, the need for
evidence is great and it is important that the
system be made in such a way. The administrative system
used here is not just the same as the system with

intelligence, how much they were affected by it, and whether they proved to be of unique character, rather than as a criterion.

1. Sociometric Scores

The sociometric scores were obtained from a questionnaire as previously described and are listed in Table 3. They represented the summary impressions by the midshipmen of those of their own number who they felt were their best leaders and best friends. Some of the midshipmen were in their fourth year of school together. Others had not joined the group until the beginning of the third year but all had at least one and one-half years together in an N.R.O.T.C. unit including a summer cruise. The overall sociometric scores ranged from 0 to 189, but the median score was 17. Thus, four of the midshipmen dominating this scoring received a considerably larger number of votes as compared to those received by others in the group. This factor influenced the statistics considerably. By the very nature of the questionnaire these scores could be categorized into leadership and friendship subtotals. It was hypothesized beforehand that the "quality" scores from the test would correlate positively with the overall sociometric scores but more highly with the leadership subtotal of

...however, how much they were affected by it, and whether they proved to be of higher character, might lead to a ...

II. Qualitative Results

The qualitative results were obtained from a question-naire we previously distributed and are listed in Table I. They represented the summary impressions of the significance of those of their own studies who they felt were their best friends and best friends. Some of the statements were as follows: "I have been of much help to others and not ... I think the group will see nothing of the kind year for ... It was at least one and one-half years ago that I ... W.D.V.C. was included in a number of cases. The overall re-sults were as follows: from 1 to 10, but the median score was 17. Thus, from the statements collected this group had received a considerable number of years as com-pared to those received by others in the group. This re-sult followed the qualitative considerations. By the very nature of the questionnaire these scores could be incor-porated into friendship and friendship statistics. It was in-teresting to observe that the "quality" scores were the best and possibly with the overall results of the scores for each study with the friendship scores at

able 3 - Corresponding Sociometric scores and Sub-scores.

OVERALL		LEADERSHIP		FRIENDSHIP	
Rank	Score	Rank	Score	Rank	Score
1	189	1	132	1	57
2	124	3	75	3	49
3	114	2	98	11	16
4	99	4	43	2	56
5	55	6	30	6	25
6	51	7	26	6	25
7	47	5	36	16	11
8	45	16	9	4	36
9	44	8	18	5	26
10	34	9	17	9	17
11	29	13	12	9	17
12	28	11	15	14	13
13	27	18	7	8	20
14	18	12	14	27	4
14	18	15	10	21	8
14	18	21	5	14	13
14	18	22	4	12	14
18	17	10	16	33	1
18	17	19	6	16	11
18	17	17	8	20	9
21	15	25	1	12	14
22	14	22	4	19	10
22	14	13	12	30	2
24	13	19	6	24	7
25	12	25	1	16	11
26	8	30	0	21	8
26	8	30	0	21	8
28	6	25	1	25	5
28	6	25	1	25	5
30	5	24	2	28	3
31	4	25	1	28	3
32	2	30	0	30	2
32	2	30	0	30	2
34	0	30	0	34	0
34	0	30	0	34	0
median = 17		mean = 17.4		mean = 14.5	
mean = 32		S.D. = 29.2		S.D. = 14.6	
S.D. = 40.29					

Table 2 - Corresponding (Estimated) Scores and Sub-scores.

OVERALL		LANGUAGE		SCIENCE	
SCORE	RANK	SCORE	RANK	SCORE	RANK
100	1	100	1	100	1
99	2	99	2	99	2
98	3	98	3	98	3
97	4	97	4	97	4
96	5	96	5	96	5
95	6	95	6	95	6
94	7	94	7	94	7
93	8	93	8	93	8
92	9	92	9	92	9
91	10	91	10	91	10
90	11	90	11	90	11
89	12	89	12	89	12
88	13	88	13	88	13
87	14	87	14	87	14
86	15	86	15	86	15
85	16	85	16	85	16
84	17	84	17	84	17
83	18	83	18	83	18
82	19	82	19	82	19
81	20	81	20	81	20
80	21	80	21	80	21
79	22	79	22	79	22
78	23	78	23	78	23
77	24	77	24	77	24
76	25	76	25	76	25
75	26	75	26	75	26
74	27	74	27	74	27
73	28	73	28	73	28
72	29	72	29	72	29
71	30	71	30	71	30
70	31	70	31	70	31
69	32	69	32	69	32
68	33	68	33	68	33
67	34	67	34	67	34
66	35	66	35	66	35
65	36	65	36	65	36
64	37	64	37	64	37
63	38	63	38	63	38
62	39	62	39	62	39
61	40	61	40	61	40
60	41	60	41	60	41
59	42	59	42	59	42
58	43	58	43	58	43
57	44	57	44	57	44
56	45	56	45	56	45
55	46	55	46	55	46
54	47	54	47	54	47
53	48	53	48	53	48
52	49	52	49	52	49
51	50	51	50	51	50
50	51	50	51	50	51
49	52	49	52	49	52
48	53	48	53	48	53
47	54	47	54	47	54
46	55	46	55	46	55
45	56	45	56	45	56
44	57	44	57	44	57
43	58	43	58	43	58
42	59	42	59	42	59
41	60	41	60	41	60
40	61	40	61	40	61
39	62	39	62	39	62
38	63	38	63	38	63
37	64	37	64	37	64
36	65	36	65	36	65
35	66	35	66	35	66
34	67	34	67	34	67
33	68	33	68	33	68
32	69	32	69	32	69
31	70	31	70	31	70
30	71	30	71	30	71
29	72	29	72	29	72
28	73	28	73	28	73
27	74	27	74	27	74
26	75	26	75	26	75
25	76	25	76	25	76
24	77	24	77	24	77
23	78	23	78	23	78
22	79	22	79	22	79
21	80	21	80	21	80
20	81	20	81	20	81
19	82	19	82	19	82
18	83	18	83	18	83
17	84	17	84	17	84
16	85	16	85	16	85
15	86	15	86	15	86
14	87	14	87	14	87
13	88	13	88	13	88
12	89	12	89	12	89
11	90	11	90	11	90
10	91	10	91	10	91
9	92	9	92	9	92
8	93	8	93	8	93
7	94	7	94	7	94
6	95	6	95	6	95
5	96	5	96	5	96
4	97	4	97	4	97
3	98	3	98	3	98
2	99	2	99	2	99
1	100	1	100	1	100

mean = 50.50
 mean = 50.50
 mean = 50.50
 mean = 50.50

those scores. In spite of the inherent weakness of the criterion this would tend to be an indicator, if significant, that the instrument should be able to distinguish good leaders. It was also hypothesized that peers look upon a "considerate bent" as more desirable in a leader. One whom they vote for is one whom they like, one who is a "nice guy." Therefore, it would seem that the sociometric scores, particularly the friendship scores, should correlate with a "considerate" test bent.

2. Superior Ratings

The superior ratings were "leadership multiples" taken from the midshipmen's records. These multiples were obtained from observations by commissioned Naval Officers over a period of three and one-half years in all cases. The observations were recorded periodically during the scholastic terms and during three summer cruises. The ratings undoubtedly suffered from the usual bias. Observations during the school year were of a very limited nature and only of formalized stilted situations. Fortunately, greater weight was given the more versatile ratings from the summer cruises. The ratings on a four point scale were from 2.92 to 3.51 which represents a range of only .59 points. It was feared that the piling up of rating scores

those scores. In spite of the limited resources of the
 existing data would be to be in London, it might
 say, that the treatment would be able to distinguish
 good leaders. It was also hypothesized that there would
 be a "consensus" that an actor's behavior is a leader,
 and that they were for in some way that they are, and that is
 a "good guy." Therefore, it would seem that the actor-
 network scores, particularly the friendship scores, should
 correlate with a "consensus" that they are.

C. Suggestion for Future

The present results were "leadership ratings" taken
 from the network's scores. These ratings were ob-
 tained from observations of a community of 1000
 over a period of three and one-half years in all cases.
 The observations were recorded systematically during the
 entire period and during those periods. The net-
 work analysis was derived from the same data. Observe-
 tions during the period were of a very limited nature
 and only of a limited nature. Therefore,
 further ratings were given the more detailed ratings from
 the present analysis. The ratings in a local social network
 from 1960 to 1961 which represent a range of data. It
 was found that the rating of rating scores

over such a narrow space would limit the reliability of a criterion otherwise most promising because of its extensive observation period and variety of raters.

Correlation of the "quality" scores with the superiors' ratings would again, if significant, tend to be an indicator that the instrument was a worthwhile measure of leadership. It was expected that the superior ratings would correlate positively with the "initiating structure bent" of the test scores; this because of the natural inclination of the superior to rate highly a subordinate who structures his acts toward the accomplishment of the mission and enhancement of the unit.

3. Intelligence Test Scores

Scores from the Ohio State Psychological Examination were used as the intelligence criterion. While the Ohio State Psychological Examination is not strictly an intelligence test, it is generally agreed that scores obtained from it can be used to represent an intelligence factor. The scores for this sample ranged from a low of 18 to a high of 100; the mean being 75, the standard deviation 21.37. These scores indicate a group of above average intelligence but one which still has a good range. Although it should be expected that quality scores of most tests would correlate with intelligence it was hypothesized that

even more a narrow group would have the possibility of a
 systematic approach with resulting increase in the efficiency
 of the investigation. The results of the investigation
 would be of the "qualitative" nature with the report-
 ing, ratings would be made, it might be, as an
 indicator that the investigation was a scientific method of
 investigation. It was suggested that the report might
 be correlated directly with the "intelligence" system
 based on the fact that the results of the investigation
 might be of the nature of the results of the investigation
 and the results of the investigation of the results of the
 investigation of the results of the investigation of the results

1. Intelligence Test Battery

Taken from the data of the Intelligence Test Battery
 was used as the Intelligence Test Battery. The data
 of the Intelligence Test Battery is not directly or indirectly
 related to the Intelligence Test Battery. It is generally
 known that it is generally known that the Intelligence Test
 Battery is used to measure the Intelligence Test Battery.
 The results of the Intelligence Test Battery are as follows:
 1. The results of the Intelligence Test Battery are as follows:
 2. The results of the Intelligence Test Battery are as follows:
 3. The results of the Intelligence Test Battery are as follows:
 4. The results of the Intelligence Test Battery are as follows:
 5. The results of the Intelligence Test Battery are as follows:
 6. The results of the Intelligence Test Battery are as follows:
 7. The results of the Intelligence Test Battery are as follows:
 8. The results of the Intelligence Test Battery are as follows:
 9. The results of the Intelligence Test Battery are as follows:
 10. The results of the Intelligence Test Battery are as follows:

this correlation would not be high in this case since the test was supposed to be measuring a pure quality not directly related to intelligence.

The scores of each individual on the leadership test used in the present study are compared with his scores on the criteria in Table 4.

Comparison of the Instrument with the Criteria

The intercorrelations of the "quality" and "bent" scores with the criteria are presented in Table 5.

The "quality" scores from the test exhibited a low but positive correlation with all the criteria. This was as hypothesized. Of particular significance was the correlation of $+0.30$ with superior ratings. One noteworthy outcome was the high correlation of the "quality" scores with the friendship sociometric of $+0.27$ as compared with the leadership sociometric of $+0.09$.

The "bent" scores correlated negatively with the sociometric scores at a low but not insignificant level of -0.24 . This means that the sociometric scores correlated by that amount with a "considerate bent." This was just as hypothesized. The superior ratings correlated more towards the "initiating of structure" as hypothesized but still "considerate" at -0.09 . Correlation with the Ohio State

Table 4 - Scores of Each Individual on the Test Compared with the Criteria.

QUALITY		BENT	OVERALL SOCIOMETRIC		SUPERIOR RATINGS		O.S.P.E.	
Rank	Score	Score	Rank	Score	Rank	Score	Rank	Score
1	86	-16	4	99	3	3.48	15	84
2	84	- 4	14	18	6	3.44	4	98
3	80	0	9	44	15	3.33	18	82
4	77	- 9	34	0	29	3.14	15	84
5	66	+ 3	1	189	12	3.35	29	52
6	63	+ 6	22	14	4	3.46	18	82
7	58	0	18	17	25	3.22	5	97
8	56	-17	26	8	27	3.18	28	55
9	53	+10	7	47	9	3.37	22	72
9	53	-13	34	0	35	2.92	31	33
11	50	- 7	14	18	2	3.49	-	-
11	50	+ 5	18	17	4	3.46	18	82
11	50	- 6	13	27	21	3.25	21	75
14	49	+10	25	12	24	3.23	10	88
15	48	+10	26	8	34	3.01	14	86
15	48	- 3	5	55	14	3.34	15	84
17	46	+ 4	6	51	17	3.30	13	87
17	46	-12	14	18	27	3.18	7	94
17	46	-18	14	18	22	3.24	29	52
20	44	0	21	15	10	3.36	25	67
21	42	- 8	8	45	16	3.31	8	89
22	41	-14	2	124	10	3.36	8	89
22	41	+ 9	11	29	8	3.39	24	70
24	40	+ 9	22	14	12	3.35	26	62
25	39	+ 4	10	34	22	3.24	2	99
25	39	+ 2	28	6	7	3.40	1	100
27	38	+22	30	5	33	3.04	33	32
28	37	-26	12	28	17	3.30	6	95
29	35	-13	24	13	32	3.06	34	18
30	34	0	32	2	31	3.10	31	33
31	30	+29	28	6	25	3.22	10	88
31	30	- 5	32	2	29	3.14	2	99
33	28	+18	31	4	17	3.30	22	72
34	20	+ 4	18	17	20	3.26	10	88
35	16	-20	3	114	1	3.51	26	62

M. = 47.5 M. = -1.3 M. = 32
S.D. = 16.19 S.D. = 12.04 S.D. = 40.29

M. = 3.28 M. = 75
S.D. = .142 S.D. = 21.37

TABLE 5

Intercorrelations of Quality and Bent Scores with the Criteria

	B		S	L	F	
	E	D F	O C	E	R	
	N +	E R	V I	A	I S	
	T	V O	E O	D	E U R	O
	t	I M	R M	E	N P A	
	S o	A	A E	R	D E T	S
	C	T Z	L T	S	S R I	
	O -	I E	L R	H	H I N	P
	R	O R	I	I	I O G	
	E	N O	C	P	P R S	E

QUALITY SCORE	- .16	- .28	+ .16	+ .09	+ .27	+ .30	+ .16
BENT SCORE (+ to -)			- .24	- .21	- .25	- .06	+ .19
DEVIATION FROM ZERO			- .01	+ .01	- .05	- .16	- .42
OVERALL SOCIOMETRIC						+ .44	+ .00
LEADERSHIP					+ .69	+ .41	
FRIENDSHIP						+ .39	
SUPERIOR RATINGS							+ .42

O.S.P.E.

Levels of Significance

.68 significant at 1 per cent level
.44 significant at 1 per cent level
.33 significant at 5 per cent level
.28 significant at 10 per cent level

Psychological Examination showed that the more intelligent midshipmen tended slightly to "initiate structure" more. When the "bent" scores were regarded as a deviation from zero, that is when the midshipmen strayed either way from a balance between "structured" and "considerate" decisions, there was virtually no relationship with the sociometric scores. However, a $-.16$ correlation with superior ratings showed some tendency for those favored by the superiors to be balanced. A significant correlation of $-.42$ with the O.S.P.E. meant that there was a tendency for the more intelligent midshipmen to hold a better balance between their "structured" and "considerate" solutions.

The criteria held interesting relationships among themselves. The overall sociometric scores correlated with the superior ratings $+.44$ but zero with the O.S.P.E. Meanwhile the superior ratings correlated $+.42$ with the O.S.P.E. Thus the superiors tended to pick the intelligent men to give high ratings to while the peers made no such distinction.

Comparison upon Exclusion of Group Leader

One interesting departure from the expected and actual scores is worthy of note. The titular leader of the group, the midshipman battalion commander, made the lowest qual-

Psychological examination showed that the man intelligent
 mischievous tended slightly to "believe" "believe" "believe".
 When the "bore" "bore" were regarded as a deviation from
 norm, it is when the mischievous tendency shows up from
 a balance between "stupidity" and "normality" "believe",
 there are virtually no relationship with the "normality"
 scores. However, a - .36 correlation with negative ratings
 showed more tendency for those favored by the negative to
 be "normal". A significant correlation of -.42 with the
 0.4-1.4. In fact, there was a tendency for the more in-
 telligent subjects to hold a better balance between their
 "stupidity" and "normality" "believe".

The results of the interesting relationship were from
 subject. The overall correlation scores correlated with the
 negative ratings +.41 and also with the 0.4-1.4. Similarly
 the negative ratings correlated +.42 with the 0.4-1.4.
 Thus the negative tended to give the intelligent man to
 give high ratings to while the poor man to give disre-

tion.

Comparison with the results of Group Leader

One interesting departure from the expected and actual
 scores is noted at once. The principal leader of the group,
 the minimum relation commander, said the lowest part-

ity score of the group, 16, and had a very high considerate bent of -20. This midshipman was the number one man in superior ratings which upon checking with the man's training officer were supported as being thorough and reliable. He ranked third in overall sociometric, but the majority of these credits were in the leadership subtotal which may have been due to a bias occurring from his titular leadership and indicate he was not as well liked as a friend as he was respected as a leader. If this one case is set aside and the remaining 34 cases are compared with the criteria, significant differences occur.

TABLE 6

Intercorrelations with One Case (the titular leader of the group) Missing

	S o c i a l i z a t i o n	L e a d e r s h i p	F r i e n d s h i p	S u p e r i o r i t y
Quality Score	+ .31	+ .29	+ .29	+ .41
Bent Score (Plus to minus)	- .16			+ .01
Bent Score (Deviation from zero)	- .10			- .22
	.29 significant at 10 per cent level			
	.41 significant at 2 per cent level			

It may be noted that the correlation of the quality score with the overall sociometric has almost doubled and is now significant at the 10 per cent level of confidence. Furthermore, the friendship sociometric subtotal is no longer prominently correlated with the quality scores but holds an equal place with leadership. Correlation with superior ratings has jumped from +.30 to +.41. The correlation spread between the plus to minus "bent" score and superior ratings remains about the same although both move in a positive (structured) direction. Correlations with test scores and the O.S.P.E. did not significantly change.

These last results after eliminating a case represent a selective rigging. They are presented only for interest, not as a way of supporting the hypothesis offered in the present study.

It may be noted that the knowledge of the quality
 seems with the overall knowledge has almost doubled and
 is now significant at the 10 per cent level of confidence.
 Furthermore, the relationship between the two variables is no longer
 as previously indicated with the quality scores but rather
 an equal place with knowledge. Correlation with separate
 ratings has moved from +.75 to +.41. The correlation
 appears between the two "best" scores and separate
 ratings remains about the same although with more in a positive
 direction (direction). Correlation with best scores
 and the O.E.I.E. has not significantly changed.
 These last results also eliminated a good regression
 a relative degree. They are presented only for interest,
 and as a set of suggested hypotheses should be the
 present study.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

It has been hypothesized that a valid paper-pencil test of potential leadership ability could be constructed if it were based on a reliable definition of leadership and two of its probable dimensions, "initiating structure" and "consideration." Such a test has been attempted and introduced in the present study. The core around which each item in the test was built was the balance an examinee would hold in decision making between the two dimensions of "initiating structure" and "consideration" in varied situations. This balance was regarded as a critical incident of leadership. A sample was selected from the senior class of midshipmen at the N.R.O.T.C., Ohio State University. The test was administered to the sample and scored with the help of judges who were officers in the United States military establishment.

Two types of scores were obtained from the test, "quality" scores and "bent" scores. "Quality" scores reflected the ability of the midshipman to devise good leadership solutions to various situations requiring him to make a deci-

CHAPTER IV

EXPERIMENTAL DESIGN AND PROCEDURES

Subjects

It has been hypothesized that a valid psychomotor test of potential leadership ability would be constructed if it was based on a reliable definition of leadership and two of the possible dimensions, "initiating structure" and "consideration". Some tests have been designed and have been used in the present study. The four groups which each took part in the test were half men and half women and would have been divided between the two dimensions of "initiating structure" and "consideration" in earlier dimensions. This balance was regarded as a critical indicator of leadership. A sample was selected from the senior class of the Ohio State University. The men were administered to the sample and scored with the help of judges who were officers in the United States military establishment.

Two types of scores were obtained from the test, "goal" and "social" scores. "Social" scores were collected in the office of the experiment in order to avoid any bias in various situations regarding the test results.

sion. The reliability of the "quality" scores was .62. The "quality" scores correlated .30 with superior ratings which is significant at the ten per cent level of confidence. The same "quality" scores correlated positively but low with both sociometric ratings and intelligence scores. The "bent" scores, if negative, reflected the inclination of the midshipman towards being "considerate." If positive, the "bent" scores reflected his inclination towards being "authoritarian." The reliability of the "bent" scores was .94. The "bent" scores correlated negatively with sociometric ratings at $-.24$ and with superior ratings at $-.06$. The "bent" scores correlated positively with intelligence at .19. The ability of the midshipman to hold a "middle of the road" balance between the "considerate" and "initiating structure" dimensions correlated .01 with sociometric ratings but positively with superior ratings at .16. This ability to hold a "middle of the road" balance correlated .42 with intelligence which is significant near the one per cent level of confidence.

The subject from the sample named as leader of the group by his superior officers was found to have ranked diametrically opposite on the test used in the present study from the rank he achieved on the criteria of leadership

also, the reliability of the "Quality" scores was .88. The "Quality" scores correlated .70 with superior ratings which is significant at the .05 level of confidence. The term "Quality" scores correlated positively but low with both systematic ratings and meaningless scores. The "Poor" scores, at negative, reflected the inclination of the midshipmen towards being "conscientious". If positive, the "Poor" scores reflected his inclination towards being "unconscientious". The reliability of the "Poor" scores was .84. The "Poor" scores correlated negatively with superior ratings at -.58 and with superior ratings at -.50. The "Poor" scores correlated positively with intelligence at .19. The ability of the midshipmen to hold a "middle" of the road balance between the "conscientious" and "unconscientious" dimensions correlated .51 with superior ratings at .16. This ability to hold a "middle" of the road balance correlated .40 with intelligence which is significant near the one per cent level of confidence.

The subject from two samples seemed as factor of the group by his superior efficiency was found to have ranked significantly opposite on the test used in the present study from one rank to another on the criteria of intelligence.

used. Whereas the "quality" scores before elimination of his case correlated only +.16 with sociometric ratings and +.30 with superior ratings, after elimination of his case the "quality" scores reached a correlation of +.31 with sociometric ratings and +.41 with superior ratings with significance at the ten per cent and two per cent levels of confidence respectively.

Conclusions

In the absence of either strong criteria or high correlations with existing criteria, it cannot be claimed that the proffered test has been proven to be either successful or valid. Neither can there be shown any facts in this study which tend to refute the original hypothesis that a test of leadership could be constructed around the proper balance a potential leader would hold in making decisions between "consideration" and "initiating structure." In fact, that proper balance exemplified by the "quality" scores correlated positively with all the criteria. The "quality" and "bent" scores could have correlated positively with the criteria as they did because of chance but nevertheless did occur in the direction expected and hoped for.

The +.30 correlation of the "quality" scores with the superior ratings using all of the cases is significant

used, between the "quality" scores before elimination of
his case compared with 4.15 with both cases retained and
4.25 with superior retained, after elimination of his case
the "quality" scores showed a deterioration of 4.25 after re-
eliminating inferior and 4.15 with superior retained with sig-
nificance at the ten per cent and the five levels of
confidence respectively.

Conclusion

In the absence of other strong criteria of high qual-
itation with existing criteria it would be almost impos-
sible to prove that the best group is the group consisting
of all. Neither can there be shown any lack in the
study which tend to confirm the original hypothesis that a
lack of homogeneity would be associated with low scores
before a potential factor would tend to make decisions
between "consistency" and "falsifying evidence." In
fact, that proper before eliminated by the "quality"
scores correlated positively with all the criteria. The
"quality" and "score" scores would have correlated positive-
ly with the criteria as they are because of scores but not
because the scores in the direction expected and hoped for.
The 4.25 correlation of the "quality" scores with the
superior ratings using all of the cases is significant

enough to indicate that the test shows a tendency to measure some of the same things that the criteria do. Since the sociometric scores and superior ratings are accepted criteria of leadership, it can be concluded that the test used in this study shows a tendency to measure that quality.*

Assumptions

1. This first draft of the test was a crude measure. Due to the unavailability of further samples, no item reliability check with its consequent purification of test items was attempted. If the test items were perfected and the revised test administered to an adequate number of cases more conclusive results might be obtained.

2. It has been found repeatedly in psychological testing that coefficients as low as .30 are of definite practical value. Occasionally, tests of low validity are promising for further development if they measure what no other test does. Since the test in the present study is one of the first attempts at leadership testing along these lines, the correlations found with the criteria may have high practical value. Thus the correlation of the "quality"

* The +.31 and +.41 correlations of the "quality" scores with the overall sociometric scores and superior ratings, respectively, of the cases when the titular leader's scores were taken out also support this conclusion.

enough to indicate that the test shows a tendency to measure the same of the same thing that the criterion does. Since the experimental results are superior within the accepted standards of membership, it can be concluded that the test used in this study shows a tendency to measure that quality."

Interpretation

1. This first study of the test was a pilot measure. One to the unreliability of further samples, no new reliability scores with its subsequent verification of test forms was attempted. If the test items were performed and the expected test administered to an adequate number of cases were descriptive results might be obtained.
2. It has been found repeatedly in psychological tests that coefficients as low as .50 may be definite practical value. Consequently, tests of low validity are often taken for further development if they measure what no other test does. Since the test in the present study is one of the first attempts at membership testing since those times, the correlations found with the criteria may have high practical value. Thus the verification of the "quality"

* The +.51 correlation of the "quality" scores with the overall membership's scores and superior ratings, respectively, of the cases with the similar leader's scores were taken out also support this conclusion.

scores with superior ratings and sociometric ratings indicate that this approach to leadership testing may have potential use in the selection of leaders. As explained before, the criteria are weak, being loaded with generalized conceptions of an isolated quality that does not exist alone. If a better test is developed, as will be suggested, it should be compared with later success in an extended leadership capacity, a much more valid criterion.

3. On the basis of the one case included, this study indicates that test scores and leadership ratings of one who is already recognized as the leader of a group may be very erratic. Therefore their inclusion in a statistical study of leadership may be misleading. If a leadership aptitude test were to be used for selection it might be indicated that there should be no previously indicated leader of the group.

Recommendations

1. The present form of the leadership test should be expanded and improved obtaining many free response answers from individuals in one area such as N.R.O.T.C. midshipmen or Naval Officer candidates. A multiple choice test that would be easier to score should then be made from these responses.

It is the policy of the Department of the Interior to provide for the maximum protection of the public health and safety of the Nation. The Department is committed to the highest standards of safety and health for all Americans. The Department is committed to the highest standards of safety and health for all Americans. The Department is committed to the highest standards of safety and health for all Americans.

3. On the basis of the case studies, this study
typically identifies a small number of related
aspects to be compared with other studies in an extended test-

of the group.

It is interesting to note that the group was not only a group of people, but a group of people who were interested in the study of the group. It is interesting to note that the group was not only a group of people, but a group of people who were interested in the study of the group.

17 The content of the memorandum was should be explained and improved containing many false statements and errors. The memorandum is one with an R.S.D. signature. Mr. James Officer, Assistant, A military division that should be stated to state would have been that time in.

2. The Naval service should continue looking for an aptitude test of leadership ability for use as a tool in the selection of officers. As leadership studies progress the resulting knowledge about leadership may have implications for the construction of better tests. A test such as the one presented in the present study might be much more effective if tried out on candidates for officer training programs since such personnel are much more unselected a population than the sample used in the prosecution of this study.

3. The high reliability of the "bent" scores of the leadership test ($r = .94$) indicate another possible use. A test of trainee's "bent" could indicate where each man tended to be too "considerate" or "authoritarian" in his thinking. Then leadership training could stress work on those areas of weakness.

3. The first section should contain nothing but the
epitaphic part of the inscription. The name of the dead in
the relation of offspring, as usually written, appears
the preceding inscription about the dead. The name of the
dead in the inscription of the first class, a last name
at the end of the inscription is the first thing to be
more effective if added to the inscription for the first time.
The inscription should contain the name of the deceased
a position that the name is used in the inscription of
the first class.

4. The high reliability of the first class of the
inscription (see p. 10) has been shown. The first class
of the inscription "first" would indicate more than any
could be to the "reliability" or "reliability" in the
first class. The inscription should contain more than any
other class of inscription.

5. The first class of the inscription should contain
the name of the deceased. The first class of the inscription
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BIBLIOGRAPHY

1. Beckman, R. O. and Levine, M. Selecting Executives, an Evaluation of Three Tests. The Personnel Journal, 8: 415 - 420, 1930.
2. Coffin, T. E. A Three Component Theory of Leadership. Journal of Abnormal and Social Psychology, 39: 63-83, 1944.
3. Eaton, Joseph W. Experiments in Testing for Leadership. American Journal of Sociology, 52: 523-35, May 1947.
4. Fearnow, F. R. Thesis - A Study of Criteria in the Evaluation of Military Leadership Potentialities in a N.R.O.T.C. Unit. Ohio State University, 1948.
5. File, Q. W. The Measurement of Supervisory Quality in Industry. Journal of Applied Psychology, 29: 323-37, 1945.
6. Fleishman, E. A. Leadership Climate and Supervisory Behavior. Ph D Dissertation, Ohio State University, 1951.
7. Freeman, G. L. and Taylor, E. K., How to Pick Leaders, New York, Funk and Wagnalls, 1950.
8. Gibb, C. A. The Principles and Traits of Leadership. Journal of Abnormal and Social Psychology, 42: 267-284, 1947.
9. Hemphill, J. K. Situational Factors in Leadership: Ohio State University, Bureau of Educational Research, 1949.
10. Hemphill, J. K. A Theory of Leadership and Group Behavior, Personnel Research Board, Ohio State University, 1951. (Preliminary Draft - Unpublished)
11. Hemphill, J. K. Leader Behavior Description. Personnel Research Board Monograph, Ohio State University, 1950.
12. Jenkins, W. O. A Review of Leadership Studies with Particular Reference to Military Problems. Psychology Bulletin. 44: 54-79, 1947.

BIBLIOGRAPHY

1. Beckman, H. B. and Levine, W. Behavioral Neuroscience: An Evolution of Three Years. The International Journal, 8, 193-197, 1930.
2. Coffey, G. W. A Three Dimensional Theory of Learning. Journal of Abnormal and Social Psychology, 30, 61-67, 1944.
3. Eason, George W. Experiments in Testing for Learning. American Journal of Psychology, 50, 203-22, May 1947.
4. Ganssow, T. W. Thesis - A Study of Learning in the Presence of Multiple Learning Potentials in a. W.S.C.P., Ohio State University, 1948.
5. Viles, E. W. The Measurement of Repetitive Quality in Learning. Journal of Abnormal Psychology, 30, 267-77, 1945.
6. Katschunas, C. A. Psychogenic Effects and Neurophysiology. Department of Psychology, Ohio State University, 1951.
7. Freeman, G. L. and Taylor, H. E., How to Read Learning. New York, Book and Magazine, 1950.
8. Gino, C. A. The Psychology and Theory of Learning. Journal of Abnormal and Social Psychology, 40, 207-208, 1947.
9. Ganssow, T. W. Experimental Factors in Learning. Ohio State University, Bureau of Educational Research, 1949.
10. Ganssow, T. W. A Theory of Learning and Group Learning. International Research Board, Ohio State University, 1951. (Unpublished)
11. Ganssow, T. W. Learning Behavior Investigation. Psychological Research Monograph, Ohio State University, 1950.
12. Jackson, G. B. A Review of Learning Studies with Special Reference to Willing Problems. Psychological Bulletin, 54, 55-77, 1947.

Bibliography - Cont'd.

13. Langendorf, W. H. Thesis. Leadership Principles as Applied to Commanding a Company of the United States Army. Ohio State University, 1948.
14. Mandell, M. Testing for Administrative and Supervisory Positions. Educational and Psychological Measurement, 5: 217-228, 1945.
15. Meier, N. C. Military Psychology. New York: Harpers, 1943.
16. O.S.S. Assessment Staff. Assessment of Men. New York: Rinehard, 1948.
17. Otis, J. L. Psychological Requirements Analysis of Company Grade Officers, Vol. I, Survey of the Literature: Department of the Army, Personnel Research Section, 1950.
18. Pigors, P. Leadership or Domination. Boston: Houghton Mifflin, 1935.
19. Sanford and Hemphill. An Evaluation of the Text "Psychology for Naval Leaders" Used in Leadership Training at the Naval Academy. (Unpublished Study)
20. Sartain, A. Q. Relation Between Scores on Certain Standard Tests and Supervisory Success in an Aircraft Factory. Journal of Applied Psychology, 30: 328 - 32, 1946.
21. Shartle, C. L. Leadership Aspects of Administrative Behavior. Presidential Address. Division of Business and Industrial Psychology, American Psychology Association, September, 1950.
22. Stogdill, R. M. Personal Factors Associated with Leadership: A Survey of the Literature. Journal of Psychology, 25: 35-71, 1948.
23. Wherry, R. J. and Fryer, D.H. Buddy Ratings: Popularity Contest or Leadership Criteria? Personnel Psychology. 2: 147-159, 1949.

LEADERSHIP APTITUDE TEST

Instructions

After each of the situations given below are blanks for three answers. If you think either of the two printed answers would be a workable solution, check it. If you think both are definitely wrong and unworkable, write in the third space the best solution you can think of. If you do write in your own answer, make it short. Answer in the space provided. Complete sentences are not necessary.

Do not try to read anything extra, such as explanations, new facts, etc., into the situation or printed answers that is not there. Answer each question before going on to the next. Do not leave any questions blank.

FOR THE FOLLOWING QUESTIONS 1 THRU 7 YOU ARE AN OFFICER IN CHARGE OF AN ANTI-AIRCRAFT BATTERY ABOARD SHIP IN A COMBAT ZONE.

1. Your guns are well known for being able to maintain a high rate of fire. During a prolonged aerial battle should you:

- _____ fire at a reduced rate and save your men.
- _____ try and maintain a high rate at all costs.

Other:

2. All of a sudden while you are in your stateroom, a blast rocks the ship. "Battle stations" is sounded. Before you can get dressed and out the door, it is announced that a torpedo has exploded in the compartment where you know some of your men are billeted. Should you:

- _____ go to your battle station.
- _____ go to the aid of your men.

Other:

3. One of your men becomes immobile with fright in combat. Should you:

- _____ try and get him sent back home.
- _____ recommend him for court martial.

Other:

4. In a decision affecting the lives of your men should you:

- _____ yourself, make whatever decision that will best accomplish the mission.
- _____ consult your men and do the will of the majority.

Other:

5. You are O.O.D. one day. Everyone on the bridge says that the Executive Officer ordered the course set at 230 degrees. You are positive he set it at 280 degrees. Should you:

- _____ set the course at 230.
- _____ set the course at 280

Other:

6. Your ship is heading into port after 6 months at sea. Your men are expecting to get ashore on liberty. One day out, your ship receives orders to put back to sea. You should:

- _____ simply give the necessary orders to your men and let them figure out what has happened.
- _____ call your men together and tell them just what has happened.

Other:

7. While at an important gun drill with your men you must leave to make another appointment. Should you:

- _____ make it known where you are going, whom you are going to see, and why.
- _____ tell them nothing, just go.

Other:

FOR THE FOLLOWING QUESTIONS 8 THRU 35 YOU ARE A DIVISION OFFICER ABOARD SHIP IN PORT.

8. One of your men is being sent to Captain's mast for stealing food from the galley. He comes to you and tells you he did not do it. Should you:

- _____ go to the Captain in his defense and try to protect him the best you can.
- _____ let the case alone in the belief that justice will be done at mast.

Other:

9. Your men are already in training 8 hours a day and do extra work on cleaning details, when your skipper orders 2 hours extra a day be devoted to small arms training by the division officers. Should you:

- _____ without explaining the immediate reason or giving the source of the order schedule this training at night.
- _____ try to skimp a bit on the cleaning or other hours of instruction so as to leave the evenings free for the men.

Other:

10. An inspection is scheduled for Saturday morning. It calls for the men to display gear topside. The day arrives bitterly cold with a strong gale blowing everything about. Should you:

_____ hold the inspection as scheduled.
_____ call it off.

Other:

11. Your chief reports that several of your men have been reporting for duty just a few minutes late each morning. Should you:

_____ do nothing until it creates a more definite problem.
_____ take immediate disciplinary action.

Other:

12. You believe that several changes might be made in the location of gear in the bunk room to improve living conditions and cleaning and working efficiency. On sounding out your men you find they are strongly opposed to any changes. Should you:

_____ put your changes into effect immediately.
_____ make no changes.

Other:

13. You and some of your men are reporting ashore for a few days schooling. Should you spend the first few hours:

_____ seeing that your men receive the proper care, sleeping quarters, food, etc.
_____ preparing yourself for your school work.

Other:

14. For months your men have been required to send their laundry to the ship's service in group lots and have been having buttons torn off and holes ripped in clothing. Should you:

_____ offer to try and get an inexpensive rate at a civilian laundry for those who want it.
_____ make no change.

Other:

15. While on liberty you bump into one of your men who asks you to loan him \$5 until he sees you again back at the ship. Should you:

_____ loan it to him if you have the money.
_____ refuse.

Other:

16. There is usually a long line of enlisted men at the cigarette counter in the Navy exchange. Should you:

_____ make it a practice to go to the head of the line.
_____ always get in line just like anyone else.

Other:

17. Should you:

_____ at every opportunity join in a group of your men telling "sea stories" and tell a few of your own.
_____ stay completely aloof from such a group and remain on your dignity.

Other:

18. Your commanding officer has just complimented your men on their fine showing at an inspection. However, there were some defects you noticed that he did not. Should you:

_____ get after your men about those defects in an attempt to make the next inspection a still better one.
_____ unqualifiedly add your compliments to those of the C.O.

Other:

19. Your unit is to be cut in strength. You are given the opportunity to suggest names of men for transfer. Should you suggest:

_____ only those men who are no good, inefficient, or troublemakers.
_____ all men who say they want to leave.

Other:

20. One of your men is reported to you for drunkenness and fighting. You know that two days previously he received word that his son had died. Should you:

- _____ let the matter drop.
- _____ discipline the man as you would any other man.

Other:

21. You have been having trouble with the discipline of your men. There have been numerous violations of minor regulations. Should you:

- _____ make the punishment stronger if the rules are not obeyed.
- _____ tolerate the violations for awhile until things are running smoothly again.

Other:

22. You have a man who appears hopeless. He is lazy, ignorant, and cannot be trusted to get any job done. Should you:

- _____ force responsibility on him.
- _____ keep him away from significant jobs.

Other:

23. You have just taken over a new division. Should you:

- _____ take it easy on the men so they will be able to see you are their friend.
- _____ bear down and show them you are really the boss.

Other:

24. For the routine work your unit has to do should you:

- _____ make known the overall job to your men and leave it to them to see how it will be done.
- _____ schedule each phase of the work in a precise plan.

Other:

25. A group of your lower ranking N.C.O.'s comes to you and tells you they can no longer work for your "chief", who they say is no good. You had not previously determined he was incompetent. Should you:

- _____ try and get the "chief" transferred.
- _____ tell the men they will have to get along with the "chief" or else.

Other:

26. One of your men enters your office in response to your summons. Should you have him state his business.

- _____ while at the position of "attention" before you.
- _____ while "at ease."

Other:

27. During a slack period that appears indefinite, your men have nothing to do. Should you:

- _____ let them lie around and do nothing all day if they want to.
- _____ make up some kind of "busy work" to keep them on the job.

Other:

28. During your training you have learned various methods of tracking planes and computing leads. Upon arrival on shipboard you find only one limited method is used which all your men are accustomed to and do well. Should you:

- _____ indoctrinate the other methods you have learned.
- _____ use the present method since your men would probably resent and resist your intrusion.

Other:

29. You get word from your C.O. that the Admiral has caught one of your good men out of uniform. Your C.O. says that it is up to you to investigate and recommend punishment. The man admits the offense. Should you:

- _____ recommend no punishment.
- _____ recommend a court-martial.

Other:

30. A recruit tries several times to get a line around a bit without success. Should you:

- _____ jump in and secure it yourself.
- _____ let him keep trying as long as he wants to.

Other:

31. Four of your men have the color detail on the July 4th holiday. It is their first time in such an assignment. Should you:

- _____ rehearse their duties with them yourself until they feel they know them well enough.
- _____ loan them the manual which explains everything very well.

Other:

32. One of your men who is perfectly capable does a job incorrectly. You order him to do it over. He refuses. You should:

- _____ discipline him.
- _____ have someone else do the job.

Other:

33. You hold your first inspection in a new command and find the area dirty. Should you:

- _____ order the men up early every morning for a week to clean the area.
- _____ wait and see how the area looks at the next inspection.

Other:

34. One of your men's original ideas is adopted as standard procedure in the command. No one knows where it came from except you. Should you:

- _____ see that the man is given some sort of material reward and plenty of publicity.
- _____ the fact that the command is helped is enough, it makes no difference if credit is given or not.

Other:

35. You find two of your men fighting. Should you:
_____ discipline them both.
_____ stop the fight and arbitrate their argument for them.

Other:

FOR THE FOLLOWING QUESTIONS 36 THRU 42 YOU ARE IN COMMAND OF A MARINE INFANTRY PLATOON IN COMBAT.

36. The infantry manual says, "The correct manner to advance against an enemy ashore is to keep low, seeking cover and concealment." But your men who have been in combat with you for some time repeatedly exposing their lives have become hardened to danger and while advancing always walk upright until fired on. Should you:

_____ permit this practise.
_____ insist on doing it exactly "by the book."

Other:

37. Your attacking party faces a difficult advance over open ground into the face of heavy enemy fire. Should you:

_____ attack and capture the ground knowing full well you will
suffer a high rate of casualties.
_____ ask permission to hold up the advance where you are.

Other:

38. As a general rule would you:

_____ direct tactics from your C.P. since the primary role of a
troop leader is to solve the tactical problem.
_____ lead your men personally, placing yourself in the front.

Other:

39. You are sure your men are saving souvenirs from the battle field contrary to regulations requiring that they be turned in to intelligence. Should you:

_____ Search each man and confiscate all souvenirs.
_____ remind them of the regulations again.

Other:

40. No one has volunteered to go on a dangerous one man mission. Should you:

- _____ go yourself.
- _____ order one of your men to go.

Other:

41. The entire command is digging two man foxholes for defensive positions. Everyone has a buddy to team with but Private Sad Sack. Should you:

- _____ team up with him yourself.
- _____ order him to dig alone.

Other:

42. You are second in command of the company. The situation is bad but not yet critical. Your C.O. cannot decide what to do. Should you:

- _____ take over the command.
- _____ try and cheer him up.

Other:

THE REMAINING QUESTIONS REPRESENT MISCELLANEOUS SITUATIONS ABOARD SHIP.

43. You are given a beer ration normally saved for the officers aboard your ship. You hear the men grumbling that as usual the officers get all the breaks. Should you:

- _____ turn the beer over to your men.
- _____ drink what you want and save the rest for later.

Other:

44. One of your men who usually does a good job has failed to perform an assigned duty. This has resulted in your group receiving an unnecessary criticism. Should you:

- _____ Call the man in for an immediate reprimand.
- _____ comfort the man in a friendly chat realizing it probably hurt him as much as it did you.

Other:

45
45. Your unit has a lot of work to do and a deadline to meet. Should you:

- _____ tell the men about the deadline once and then rely on their spirit of cooperation to meet it.
- _____ keep reminding your men of the deadline to continually spur them on.

Other:

SOCIOMETRIC RATINGS

Consider all the men in your senior class of Naval R.O.T.C. Midshipmen in answering the following questions. List in order of your preference the three names which best fit the bill. Do not leave any blank.

1. If you were to be given command of a small ship, whom would you pick as your Executive officer?

1.

2.

3.

2. If your son were going to sea as an enlisted man, who would you most like to see be his immediate commanding officer?

1.

2.

3.

3. Who do you think is most deserving to be your Midshipman Battalion Commander, 4 striper?

1.

2.

3.

4. If you were able to pick whom you would be stationed with at your first duty station, whom would you pick?

1.

2.

3.

5. Whom would you most like to take a trip with?

1.

2.

3.

6. Who do you think is the "nicest guy" in the class?

1.

2.

3.



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